

Dr. John R. Swanton, the third speaker, considered the linguistic and cultural relations of the Indians living in the Gulf area within historic times. He stated that the Muskogean linguistic stock was the largest in the region, that Natchez, once thought to be distinct, is now known to have been a widely divergent dialect, and that there is good reason to suppose that some tongues spoken to the westward, as well as the Timucua languages of Florida, would prove to belong to the same group. The south Florida languages were probably typical Muskogean, but not enough of them is known to establish the fact. Comparing the Muskogean languages with those of the other great stocks of eastern North America, we find them associated much more closely in structure with Uchean and Siouan than with Iroquoian, Caddoan, or Algonquian. In conclusion, Dr. Swanton called attention to cultural differences between the Gulf tribes, even those belonging to the same stock, using Creek and Choctaw by way of illustration.

JOHN M. COOPER, *Secretary*

## THE ENTOMOLOGICAL SOCIETY

### 369TH MEETING

The 369th meeting was held at the National Museum November 6, 1924, with President BÖVING presiding and 38 persons present.

*Program:* G. A. DEAN: *The corn borer situation.* (Illustrated.) The European corn borer, which has become firmly established in the United States and Canada, probably gained entrance into America in 1909 or 1910 in broom corn imported from Hungary and Italy, although not until the summer of 1917 was it first reported and identified in the United States. At this time an infestation, covering an area of nearly 100 square miles, was found in the vicinity of Boston.

In January, 1919, the insect was discovered in the vicinity of Schenectady, N. Y., and in September, 1919, separate infestations were found south of Buffalo and at Girard, Pa. In August, 1920, Canadian entomologists reported an infestation in Ontario, beginning near St. Thomas and extending east along the lake shore to the Niagara River. In 1921 a slight infestation was found throughout a narrow strip of territory bordering on Lake Erie in Pennsylvania, Ohio, and Michigan.

While the results of the infestations in sweet corn and garden truck in Massachusetts and the injury to flint corn in Ontario were such as to demonstrate its importance as a serious pest, there still remained in the mind of some investigators doubt as to the seriousness of the borer in large dent corn, which is grown throughout the greater part of the corn belt. However, after making an inspection tour in company with several Canadian entomologists and agricultural agents of the dent corn areas of Kent and Essex counties, and observing the serious injury caused by the corn borer to the crop of 1924, the speaker was impressed by the tremendous potentiality of this insect once it became established throughout the corn belt. Apparently the dry climate conditions during July and August that are conducive for maximum yields of corn are identical with those favorable for a rapid increase of the borers, and it would seem, thus, that the most serious loss might be expected on the best corn crops.

The life history of the insect in eastern New York, New England, and the Lake Erie region was given in detail by the speaker.

The nearly completed annual survey activities have disclosed such alarm-

ing facts as a spread of from 1900 square miles to 3350 square miles, or nearly 150 per cent in Ohio, with an average increase of 100 per cent in intensity; in Michigan a spread of from 800 square miles to 2350 square miles, or nearly 300 per cent of the original territory, with a considerable increase in intensity; and a spread of from 750 square miles to 1300 square miles, or nearly 150 per cent, in northwestern Pennsylvania, with a marked increase in intensity. In addition to these developments, a limited infestation has appeared on the northeastern side of Staten Island. One new spot of infestation has appeared on Long Island close to the commercial sweet corn center, and a series of infestations has developed along the south shore of Connecticut in the towns of Bridgeport, West Haven, Old Lyme, New London, and Stonington.

The Canadian situation, which last year seemed to be fairly well in hand, has broken out with renewed intensity, and the principal dent corn growing areas in Essex and Kent Counties, Ontario, are now so seriously infested as to cause considerable commercial injury. The prevalence of moisture, heavy dews, and high humidity during the incubation of the eggs and during the early or first instar stage of the larvae apparently caused very little mortality of the eggs, and permitted large numbers of the larvae to become established in the tassels, leaves, stalks, and ears of the corn plants.

In Massachusetts there has been not only a very marked decrease in the intensity of infestation, but also very little spread in infestation. This decrease apparently is due principally to the adverse climatic conditions which prevailed during the summer of 1923. The thorough clean-up of fields, gardens, and small weed areas and the fall plowing of practically 90 per cent of the cultivated fields probably contributed considerably to the decrease in the infestation. In eastern New York the infestation remains about the same, that is, there has been very little spread and very little decrease in the intensity of the infestation. (*Author's abstract.*)

The paper was discussed by MESSRS. ALDRICH, BAKER, GRAF, ROHWER, and SASSER.

*Notes and discussion:* Dr. HOWARD gave an informal talk on *Some entomologists at last summer's Stanford meeting and at the Hawaiian Conference.*

Dr. J. M. Aldrich read a note by R. C. SHANNON, entitled *Brief history of egg-laying habits of Dermatobia*. The so-called human bot-fly, *Dermatobia hominis* L. f., of Tropical America is of great interest because its larva frequently parasitizes man, but it affords considerable added interest because of its most unusual method of disposing its eggs.

Its mode of attack was long a mystery. Published accounts of the larva and its parasitism in Man date as far back as 1749, but not until 1900—150 years later—was there any definite clue as to its secret method of attack. It was, naturally, believed that the adult fly came directly to the host and laid its eggs on the skin but no authentic records were ever published to show this to be true. The natives of the region believed that the bot was acquired through the attack of other insects, and among natives of certain regions it was called mosquito-worm.

During the years 1900—1910 a number of mosquitoes were collected in various parts of Central and South America which had the eggs of another insect attached to them and these, upon dissection, showed that they contained the larva of a bot-fly. The eggs, usually eight to ten to a mosquito, were placed on the lower surface of the abdomen and pointed obliquely downward and backward in such a manner that when the mosquito is sucking blood, the free, or hatching, end is nearest the skin of the host. The eggs are arranged in compact clusters and attached by means of a strong cement-